

Date: Thu, 9 Dec 93 04:30:22 PST  
From: Ham-Ant Mailing List and Newsgroup <ham-ant@ucsd.edu>  
Errors-To: Ham-Ant-Errors@UCSD.Edu  
Reply-To: Ham-Ant@UCSD.Edu  
Precedence: Bulk  
Subject: Ham-Ant Digest V93 #137  
To: Ham-Ant

Ham-Ant Digest                      Thu, 9 Dec 93                      Volume 93 : Issue 137

Today's Topics:

9913, N Connectors and Water Tight Seal  
AM & SW antennae for \$5 , Great for Superradio III !  
Automatic Antenna tuners (2 msgs)  
best stealt antenna?  
First antenna for 160 meters  
Helical Antennae  
Hustler 4BTV query  
Isoloop on Apt Terrace  
Phone No. for Andrew Cabl  
Pinched COAX  
Power Antennas  
Suggestions for HF condo antennas?  
turnstile reflector

Send Replies or notes for publication to: <Ham-Ant@UCSD.Edu>  
Send subscription requests to: <Ham-Ant-REQUEST@UCSD.Edu>  
Problems you can't solve otherwise to brian@ucsd.edu.

Archives of past issues of the Ham-Ant Digest are available  
(by FTP only) from UCSD.Edu in directory "mailarchives/ham-ant".

We trust that readers are intelligent enough to realize that all text  
herein consists of personal comments and does not represent the official  
policies or positions of any party. Your mileage may vary. So there.  
-----

Date: Mon, 6 Dec 1993 11:32:29 GMT  
From: sgiblab!spool.mu.edu!torn!csd.unb.ca!upei.ca!UPEI.CA!seeler@ames.arpa  
Subject: 9913, N Connectors and Water Tight Seal  
To: ham-ant@ucsd.edu

Earlier this year a question arose as to how to dry out 9913 in which  
water had apparently been able to enter the cable at the junction  
with the antenna. A number of responses were made as to how to seal  
the joint at that time and it seems that I have lost the information.

-----  
Date: Tue, 7 Dec 1993 16:43:36 GMT  
From: usc!howland.reston.ans.net!pipex!bnr.co.uk!corpgate!news.utdallas.edu!  
feenix.metronet.com!copeland@network.ucsd.edu  
Subject: AM & SW antennae for \$5 , Great for Superradio III !  
To: ham-ant@ucsd.edu

I finally found a cheap solution for an AM antennae for my Superradio III.

In the September 1993 issue of Monitoring Times on page 100 is an article on how to make passive and active AM antennaes.

It has a picture of a small PC board to make the active antennae.  
It boosts antennae gain 10db. The author will sell the blank PC boards for \$3.50 + \$1.50 for shipping.

The address is:

FAR Circuits  
18N640 Field Court  
Dundee, IL 60118

If you want a copy of the article, I can e-mail you the two pages in GIF or TIF format. Send request to copeland@feenix.metronet.com

Newsgroups: rec.radio.amateur.antenna,  
            rec.radio.amateur.equipment,  
            rec.radio.amateur.homebrew,  
            rec.radio.shortwave  
Subject: AM & SW antennae for \$5  
Summary:  
Expires:  
Sender:  
Followup-To:  
Distribution: world  
Organization: Texas Metronet, Internet for the Individual 214-705-2917 (info)  
Keywords:  
Cc:

I finally found a cheap solution for an AM antennae for my Superradio III.

In the September 1993 issue of Monitoring Times on page 100 is an article on how to make passive and active AM antennaes.

It has a picture of a small PC board to make the active antennae.  
It boosts antennae gain 10db. The author will sell the blank PC boards

for \$3.50 + \$1.50 for shipping.

The address is:

FAR Circuits  
18N640 Field Court  
Dundee, IL 60118

If you want a copy of the article, I can e-mail you the two pages in GIF or TIF format. Send request to [copeland@feenix.metronet.com](mailto:copeland@feenix.metronet.com)

-----  
Date: 6 Dec 1993 11:48:27 -0800  
From: ucsnews!newshub.sdsu.edu!usc!howland.reston.ans.net!europa.eng.gtefsd.com!  
library.ucla.edu!csulb.edu!paris.ics.uci.edu!not-for-mail@network.ucsd.edu  
Subject: Automatic Antenna tuners  
To: ham-ant@ucsd.edu

It's tough to talk about auto tuners in general. They are pretty much limited to antennas that are close to a good match to begin with. Very few will match a long wire or other funny antennas, and very few cover 160 meters. I have a rig with an auto tuner and don't use it when I am in the shack, I use my manual tuner, which allows me to present a lower swr to the radio in most all cases. In the mobile, I am tempted, and frequently use the auto tuner to go some distance from the resonant frequency of my mobile antenna.

I suspect that the auto tuners are just great if you hang a G5RV type antenna for a couple of bands, or have dipoles, and just want to ragchew or chase DX on occasion. They do cost significantly more than good manual tuners with meters, antenna switches and baluns, though.

My two cents.

Clark

.....  
Clark Savage Turner, Graduate Student Researcher  
Safety Critical Software Group home:  
Department of Info. and Computer Science 1514 Verano Place  
Irvine, CA. 92717 Irvine, CA. 92715  
(714) 856 4049 (714) 856 2131

WA3JPG, QRP #3526, active on HF, VHF and UHF.  
Admitted to practice law in California, Massachusetts, and New York.  
ARRL Volunteer Counsel

-----  
Date: Sun, 5 Dec 1993 20:29:19 GMT  
From: agate!iat.holonet.net!pubcon!brian.oakley@ames.arpa  
Subject: Automatic Antenna tuners  
To: ham-ant@ucsd.edu

i used a kenwood rig with an automatic antenna tuner included inside for a club station. it worked very well, just hit the tune button and it would tune the antenna within 2 to 5 seconds. we even loaded a radio shack discone for use on 20 meters. it worked great! good luck and 73 wb5kxw

-----  
Date: Tue, 7 Dec 1993 15:23:41 +0000  
From: usc!howland.reston.ans.net!pipex!demon!abacus!dmb@network.ucsd.edu  
Subject: best stealt antenna?  
To: ham-ant@ucsd.edu

In article <2e0daf\$kan@organpipe.uug.arizona.edu>, Joe Miller <jmiller@peds.eyes.arizona.edu> wrote:  
>What would be my best option for a hidden antenna?  
>I have a span of 20" at height of 17'.  
>  
>Dipole, with ladder line, to mfj949d tuner, or  
>  
>end fed (short) long wire with pi net for a single band.  
>(if so, what band for stateside cw ragchew, given height limitations?)  
>  
>thanks,  
>Joe WB8CVF  
>

For a span of 20", I'd use a whip Joe :-)

73

David.

--

David Byrne, Abacus Software, London, UK                      Tel: +44 71 930 4884  
Email: dmb@abacus.demon.co.uk                                  Fax: +44 71 839 7445  
Here's a koan: If you have ice-cream I will give you some. If you have none,  
                  I will take it away from you. (it's an ice-cream koan).

-----  
Date: Mon, 6 Dec 1993 13:45:09 GMT

From: pacbell.com!att-out!cbnewsj!w1gd@ames.arpa  
Subject: First antenna for 160 meters  
To: ham-ant@ucsd.edu

In article <N4HY.93Dec2111528@tang.ccr-p.ida.org>, n4hy@tang.ccr-p.ida.org (Bob McGwier) writes:

>  
>  
> I am a 160 meter operator at N2RM and that is a site that uses inverted  
> L's. They perform brilliantly and have a nice low angle of radiation.  
> You do definitely want the performance enhancement you will get from the  
> vertical portion for the skywave coming in on 160. HOWEVER, the antenna  
> will be CRAP if you cannot lay out a bundle, and I do mean a bundle of  
> radials. If you do not have room for quarter wave radials, 30-50 of them,  
> go with the inverted vee.  
>  
> Bob  
> --

I agree with Bob about the inverted-L. However, I don't NECESSARILY agree with the need for that many radials. It depends on what you want to do on 160. Like Bob, I'm active in DX contests and the main reason I put up my antenna was to get a few easy contacts and multipliers in the DX contests. I decided to try a 0.25 wavelength inverted-L. The vertical part is only about 55 feet and runs up along my tower, about 3-feet away from the tower. So far, I've only put out two 0.25 radials but I've been amazed with the results! I certainly don't work the stations that N2RM does, but I'm only running 150 watts on 160 (AND I can walk in the woods without getting all tangled up in the hundreds of radials N2RM has in his woods). With this set up, I still usually work loud Europeans and several Carribean/Central American stations in the contests. Of course, one of my antenna projects this winter is to lay out a dozen or so more 0.25 wavelength radials before the CQ 160 contests. This can only make the inverted-L work better.

Gerry Kersus, W1GD

-----  
Date: 7 Dec 93 20:30:43 +1030  
From: munnari.oz.au!foxhound.dsto.gov.au!fang.dsto.gov.au!dstos3.dsto.gov.au!  
peake@uunet.uu.net  
Subject: Helical Antennae  
To: ham-ant@ucsd.edu

Here are a couple of references to helical antennae for those interested.

"Antenna Engineering Handbook" Second Edition  
Edited by Johnson and Jasik

McGraw-Hill ISBN 0-07-032291-0

"Antennas"

J.D.Kraus (The "inventor")

McGraw-Hill 1950

Both books cover the subject of arrays of helices and give the following rule-of-thumb for gain estimation.

As the spacing between elements is increased to  $> \sqrt{G_e/4\pi L}$  where  $G_e$  is the gain of the individual helices and  $L$  is wavelength, the power gain approaches the theoretical maximum of  $NG_e$  where  $N$  is the number of elements.

I mentioned problems with a 4 element helical array and rechecking my notes reveals that the problem was in the feed point. I had tried to mount an "N" connector on the underside of the ground plane and to this end, the connector was mounted on metal stand-offs of about 1/2 inch length. This created (apparently) ground loops (this is at 1800 MHz) giving a poor VSWR. This was improved considerably by mounting the connector on the other side of the ground plane such that no stand-offs were needed. I never got the time to re-measure the gain so I've no idea if the altered feed actually worked. (As an aside - the gain problem for the exercise was solved by sticking a dipole at the focus of a six foot parabolic!)

I have a few other references to helical antennae for anyone interested.

Alan Peake

-----

Date: 8 Dec 93 18:26:46 GMT  
From: nih-csl!helix.nih.gov!mack@uunet.uu.net  
Subject: Hustler 4BTV query  
To: ham-ant@ucsd.edu

In article <CHpBHD.E4E@news.cis.umn.edu> roban001@maroon.tc.umn.edu (Philip Karl Roban) writes:

>I have an older (70's) Hustler (perhaps Cushcraft, but I don't think so)  
>four- or five-band trapped vertical, called either  
>the 4-BTV or 5-BTV, respectively. I  
>lost the instruction manual years ago and I wonder if anyone  
>would have one or a facsimile thereof. In particular, I need to know  
>Hustler's recommendations for the tuning lengths, as well as  
>the radial wire arrangements called for.

Instructions: Check that the traps are still OK (the caps have not

cracked etc, the joints inside to the coils are not corroded - slip the caps and the outer sleeves off after marking where they are so you can put them back), check that the coils are continuous etc with an ohmmeter-

wiggle the traps to make sure that the connections are good.

Decide on whatever length and number of ground radials you want (I use none and get out all I want, I had radials but couldn't tell the difference - and they got caught in the lawn mower etc) - if you want to do it properly use 120 of  $1/4$  wavelength at each freq. It tunes fine without radials.

I buried a piece of water pipe (about 1.25" OD) about 3' in the ground and clamped the 5BTV to it. You can buy an adapter for garden hose to water pipe and use it to run water through the piece of water pipe. This will allow you to hydraulically excavate the hole for the pipe. Fill in the rest of the hole with cement (dirt actually does just fine too).

Now the interesting part. Starting at the highest freq (10m) decide where you want to operate (say 28.5, or 28.050, whatever) and using a noise bridge (buy one from Palomar, there's one on the net for sale right now, grab it) tune the lower trap. (You could in principle use the TX and a SWR meter. However you will go insane, the actual freq of the antenna could be 27MHz and you will never find it.) The way you tune the trap is to ignore everything on the pole above the trap, then adjust the length of pole that is just below the trap and the placement of the tuning capacitor on the pole (the capacitor is the larger tube that covers the trap) till you get the right feed impedance (or the best anyhow) at the right frequency. This will require a few iterations. Then tighten the clamps on the tube and the cap.

(By the way in the manual Hustler say "DO NOT ADJUST THE CAPACITORS, YOU WILL VOID THE WARRANTY". I couldn't get mine to tune right till I figured out that there must be something important in that piece of information.)

At this stage you have adjusted the bottom trap to resonance at your freq. This trap will appear inductive at the next lower freq (15m) and shorten the distance to the next trap. The adjustment of the 10m trap will affect the tuning of all the traps above it, however all the traps further up have no effect on the 10m trap at 10m. So

once  
having adjusted the 10m trap, do not touch it again.

Do the same thing at 15m. Pick your freq. Adjust the length of tubing just below the 15m trap (ie between the 10 and 15m trap), and the placement of the capacitor along the pole. And so on up the pole. It will take a little while. While the lower traps can be adjusted from a ladder (make sure to take it away during testing), the upper traps require taking the antenna down each time - a pain.

Make sure you have all the bits, the spider at the end of the 40m element etc otherwise you won't get it to tune. Replace cracked plastic caps etc. Ordering parts from Hustler is Byzantine. Some parts they sell, others are only available from Hustler directly. I needed a replacement trap once and had to wait 6 weeks while they made it. Apparently they don't keep stocks. Compare this to Rutland etc, they have the stuff out the next morning.

Mine is tuned so that I don't need a tuner between the TX and the 5BTV and I have SWR<1.5:1 everywhere I operate. Not too bad.

Joe NA3T  
mack@ncifcrf.gov

-----  
Date: Sun, 5 Dec 1993 20:09:29 GMT  
From: agate!iat.holonet.net!pubcon!brian.oakley@ames.arpa  
Subject: Iso-loop on Apt Terrace  
To: ham-ant@ucsd.edu

wow! wish i could get an iso-loop to power my rig! would save me lotsa money! ;) j/k. about the only solution i can see is to raise it up as high as they will allow you to. 73. wb5kxw

-----  
Date: Sun, 5 Dec 1993 20:40:21 GMT  
From: agate!iat.holonet.net!pubcon!brian.oakley@ames.arpa  
Subject: Phone No. for Andrew Cabl  
To: ham-ant@ucsd.edu

i think its 1-800-255-1479  
-----



Date: Sun, 5 Dec 1993 20:18:41 GMT  
From: agate!iat.holonet.net!pubcon!brian.oakley@ames.arpa  
Subject: Pinched COAX  
To: ham-ant@ucsd.edu

sure! you will have the same effects if you changed the shape of the cable by any other means. it will create a "hotspot" so to speak where the impedance of the cable will be altered and an swr produced, providing there was none before :). most of the time you can find a spot on the car door or hatchback in my case where the only thing that clamps down on the cable is the rubber insulation around the door. if you run low power, it more than likely will only affect your signal strength, however if you run high power, it could be fatal for the transmitter. good luck and 73 wb5kxw

-----  
Date: 8 Dec 93 18:53:38 GMT  
From: anagld!jruschme@uunet.uu.net  
Subject: Power Antennas  
To: ham-ant@ucsd.edu

<I added the crosspost to r.r.a.a in the hopes of getting some more technical input. Please excuse me if this was a mistake. - JR >

In article <755326760.AA01161@chigate.fidonet.org>  
Jerry.Smith@f747.n115.z1.fidonet.org (Jerry Smith) writes:  
>DM>From: meyer@whatever.cs.jhu.edu (Daniel Meyer)

>  
>DM> Has anyone ever tried any of these devices, the one you plug into  
>DM>a wall, and use the electrical circuits in your house as an antenna.  
>DM>Theoretically, I would think this would work quite well, of course reality  
>DM>and theory are quite different. So does anyone have any experiences with  
>DM>how they work, and on what freqs?

>  
> Don't get one!! These things are junk. All they are, from what I  
> understand, is a capacitor connected to the hot side of the power  
> line. The other end is usually connected to the antenna jack. These  
> things usually yield very bad results. Even more damaging is in the  
> case of the capacitor deciding to short out, thereby sending voltage  
> to your antenna input and converting your receiver to a door stop.

I'm a bit curious myself as to the construction/operation of such an antenna. Certainly the devices have been around in one form or another for many years.

The simplest design I saw was in a 50's electronics mag. It was built

using an electric plug and zip cord connected as follows:

```

      -----
--|   |-----
--|   |----- to radio
      -----
      plug

```

Basically, one lead of the cord is connected to the plug. The far end of the other lead is connected to the radio.

It would seem that there is little chance of a short provided the cord is not damaged. I assume that some sort of inductance is used to create the antenna.

On one of the archive sites, I've seen plans for a similar antenna which used the red (or green) wire of a telephone plug instead of an electric plug.

<<<John>>>

-----  
Date: 7 Dec 1993 16:07:09 GMT  
From: haven.umd.edu!cs.umd.edu!mojo.eng.umd.edu!mebly@uunet.uu.net  
Subject: Suggestions for HF condo antennas?  
To: ham-ant@ucsd.edu

I am helping a new ham install an HF radio setup in her condominium/townhouse.

External antennas are prohibited. That leaves her attic. The attic is about 25' by 35'. I've considered hanging a 15/10 meter dipole (or, more likely, inverted vee) from the peak of the roof in the attic. This would get her onto 10 and 15. (She's a new Tech +).

I don't want to try to set up a long wire and tuner yet.

I've also considered putting up a loop around the base of the attic. It seems that absorption might be a problem here.

Does anyone have any comments about the loop or other suggestions?

E-mail responses are fine.

Thanks and 73.

--

Mark Bailey      KD4D  
mebly@eng.umd.edu

Motto: Life's too short to drink cheap beer.  
Disclaimer: I didn't really say this.

-----  
Date: Sun, 5 Dec 1993 20:13:07 GMT  
From: agate!iat.holonet.net!pubcon!brian.oakley@ames.arpa  
Subject: turnstile reflector  
To: ham-ant@ucsd.edu

thanks for the tip. if i ever get around to building it, ill try it out both ways and see what works best for me. obviously youve heard of this set up, can you kinda point me to any books or articles that have this discussed in them? any help will be appreciated. 73. wb5kxw

-----  
Date: (null)  
From: (null)  
1. Use N connectors and install them PROPERLY!

2. Before putting the connector on the cable - seal the cable with a non-conductive, noncorrosive compound.
3. Use a combination of Scotch Kote and quality tape layers to seal the joint after the connector is placed and attached to the antenna. Mentioned were 23, 33 and 88 brands of tape I believe.

Is this correct?

If so - suggestions as to the compound used to seal the 9913 before placing the N Connector? Also - since my cable is on order ( none on the island ) suggestions as to how to do this without harming the cable - or is the air channel that large?

Which of the tapes mentioned above is better - or is it a matter of what you can get your hands on?

Instead of Scotch Kote others had mentioned other compounds - suggestions anyone? Can coax-seal with proper tape and taping job work?

Your comments and suggestions would be GREATLY appreciated. This cable will be used for the 440 MHz run ( and the last part of the setup ) for a digital satelllite station and I would like it to last for a while :-).

73 for now - David Seeler, VY2DCS  
Internet: SEELER@UPEI.CA

-----

End of Ham-Ant Digest V93 #137

\*\*\*\*\*

\*\*\*\*\*